

**AMENDMENTS TO THE CLAIMS**

1-19. (cancelled)

20. (previously presented) A method for identifying fluorescing, luminescing and/or absorbing substances in the analysis of samples, the method comprising: on and/or in sample carriers, particularly with high sample throughput in sample screening and/or in diagnostics, such as in the analysis of samples in microtiter plates comprising the steps of:

providing a sample to be examined and at least one standard sample;

recording a spectrum of the at least one standard sample;

splitting a sample light into its spectral components ~~carrying out a spectral splitting of sample light;~~

~~carrying out detection in a plurality of detection channels; and~~

~~carrying out at least one summation and/or combination of signals of the individual channels for at least a portion of the detection channels.~~

determining spectral regions of interest in which measurement is carried out automatically or by input means, based on measured standard spectra; and

summing the detection channels of at least one spectral region of interest;

wherein the samples are measured sequentially in microtiter plates.

21. (currently amended) The method according to claim 20, comprising arranging ~~at least one standard sample and/or~~ at least one blank sample on the sample carrier in addition to the substances to be examined.

22. (canceled)

23. (canceled)

24. (canceled)

25. (previously presented) The method according to claim 20, comprising carrying out a change in the regions of summed detection channels and/or individual detection channels or switching off groups of channels.

26. (previously presented) The method according to claim 20, comprising determining a relative

signal intensity of the substance is determined from the quotient (PRB-BLK) / (STD-BLK), where PRB is the measured signal of the substance, STD is the measured signal of the standard sample, BLK is the measured signal of the substrate (blank sample).

27. (previously presented) The method according to claim 20, comprising taking an average over a plurality of samples for STD and/or BLK.

28. (previously presented) The method according to claim 20, comprising carrying out a spectral unmixing according to at least two components for at least one substance based on standard samples.

29. (previously presented) The method according to claim 20, comprising taking the ratio of at least two components by unmixing.

30. (previously presented) The method according to claim 20, further comprising the step of providing a dispersive element, such as a grating or prism, and a receiver arrangement which is spatially resolving in at least one direction.

31. (previously presented) The method according to claim 30, wherein the receiver arrangement is a line detector.

32. (previously presented) The method according to claim 31, wherein the line detector is a multichannel PMT.

33. (currently amended) The method according to claim 20, further comprising carrying out a spectral weighting between a plurality of detection channels, carrying out a summation of the weighted channels of the signals of the detection channels, and carrying out a summation of the detection channels.

34. (currently amended) The method according to claim 33, wherein ~~the~~ a weighting curve of the weighted channels is a straight line.

35. (previously presented) The method according to claim 33, wherein signals of detection channels are converted and digitally read out, and the weighting and summation are carried out digitally in a computing device.

36. (previously presented) The method according to claim 33, wherein the weighting and summation are carried out with analog data processing by means of a resistor cascade.

37. (previously presented) The method according to claim 36, wherein the resistors are adjustable.

38. (previously presented) The method and/or arrangement according to claim 33, wherein the weighting curve is adjustable.

39. (currently amended) An arrangement for identifying fluorescing, luminescing and/or absorbing substances in the analysis of samples, the arrangement comprising: on and/or in sample carriers, particularly with high sample throughput in sample screening and/or in diagnostics, such as in the analysis of samples in microtiter plates comprising:

means for providing a sample to be examined and at least one standard sample;

means for recording a spectrum of the at least one standard sample;

means for splitting a sample light into its spectral components carrying out a spectral splitting of sample light;

means for carrying out detection in a plurality of detection channels; and

means for carrying out at least one summation and/or carrying out a combination of signals of the individual channels for at least a portion of the detection channels.

means for determining spectral regions of interest in which measurement is carried out automatically or by input means, based on measured standard spectra; and

means for summing the detection channels of at least one spectral region of interest;

wherein the samples are measured sequentially in microtiter plates.

40. (currently amended) The arrangement according to claim 39, including means for providing wherein at least one standard sample (STD) and/or one blank sample (BLK) are/is arranged on the sample carrier in addition to the substances (PRB) to be examined.

41. (canceled)

42. (canceled)

43. (canceled)

44. (previously presented) The arrangement according to claim 39, wherein means are included for carrying out a change in the regions of summed detection channels and/or individual detection channels or for switching off groups of channels.
45. (previously presented) The arrangement according to claim 39, wherein means are included for determining a relative intensity of the substance from the quotient  $(PRB-BLK)/(STD-BLK)$ , where PRB is the measured signal of the substance, STD is the measured signal of the standard sample, BLK is the measured signal of the substrate (blank sample).
46. (previously presented) The arrangement according to claim 45, including means for taking an average over a plurality of samples for STD and/or BLK.
47. (previously presented) The arrangement according to claim 39, including means for carrying out a spectral unmixing according to at least two components for at least one substance based on standard samples.
48. (currently amended) The arrangement according to claim 39, including means for taking the ratio of at least two components by unmixing.
49. (previously presented) The arrangement according to claim 39, wherein a dispersive element, such as a grating or prism, and a receiver arrangement which is spatially resolving in at least one direction are provided.
50. (previously presented) The arrangement according to claim 49, wherein the receiver arrangement is a line detector.
51. (previously presented) The arrangement according to claim 50, wherein the line detector is a multichannel PMT.
52. (previously presented) The arrangement according to claim 39, including means for carrying out a spectral weighting between a plurality of detection channels, a summation of the weighted channels of the signals of the detection channels and a summation of the detection channels.
53. (currently amended) The arrangement according to claim 52, wherein the a weighting curve of the weighted channels is a straight line.
54. (previously presented) The arrangement according to claim 52, including means for converting and digitally reading out signals of detection channels and the weighting and summation are carried out digitally in a computing device.

Serial No.: 10/500,648

55. (previously presented) The arrangement according to claim 49, wherein the weighting and summation are carried out with analog data processing by a resistor cascade.

56. (previously presented) The arrangement according to claim 55, wherein the resistors are adjustable.

57. (previously presented) The arrangement according to claim 52, including means for adjusting the weighting curve.